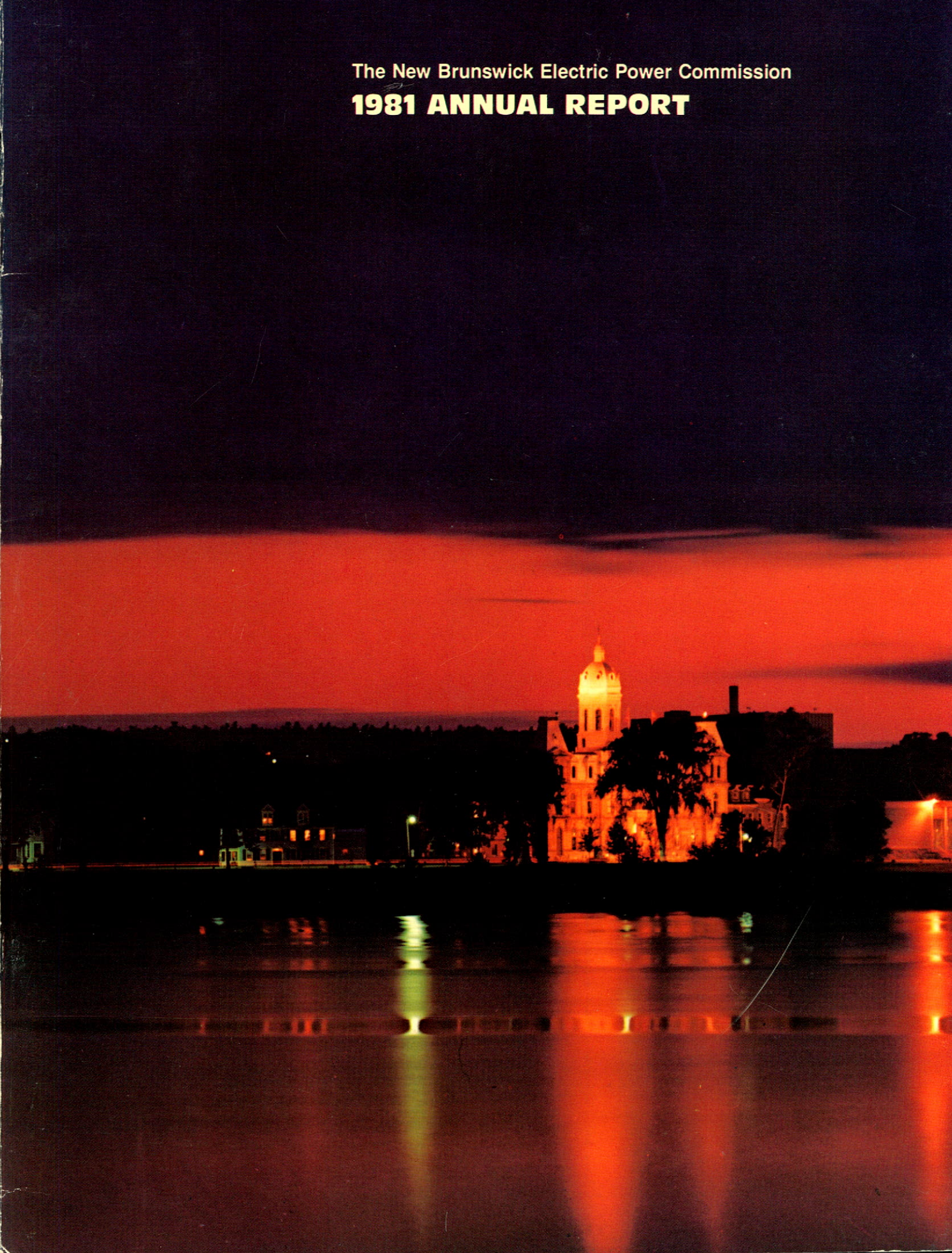
The New Brunswick Electric Power Commission

1981 ANNUAL REPORT



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Corporate Information

Commission:

Hon. G.W.N. Cockburn, Q.C., Chairman
Louis E. Landry, Vice-Chairman
Gaetan Bosse, Commissioner
Jean C. Chiasson, Commissioner
William K. Cleghorn, Commissioner
Peter J. Dykeman, Commissioner
Eric C. Garland, Commissioner
Harry Williston, Commissioner
Donna K. Young, Commissioner

Managing Officers:

Arthur J. O'Connor, General Manager
G. H. Donald Ganong, Assistant General Manager, Engineering & Construction
Frank C. MacLoon, Assistant General Manager, Operations
Richard A. Toner, Assistant General Manager, Administration
Paul S. Creaghan, Q.C., Secretary & General Counsel
Robert D. Brown, Treasurer
G. Linwood Titus, Manager, Strategic Development
Harold V. McIntyre, Manager, Labour Relations (Major Construction)
Terrence S. Thompson, Manager, Public Affairs
Frank H. Ryder, Manager, Corporate Economic Studies

Financial Highlights

	1981	1980
Total Revenue	**$ 455,031,722**	$ 409,957,872
Total Expenditures And Appropriations	**443,014,252**	401,097,381
Real Property And Business Taxes	**12,236,073**	10,572,351
Provincial Sales Tax Paid	**2,067,050**	2,352,498
Salaries And Wages Paid	**61,765,716**	54,222,982
Fixed Assets, Including Work In Progress	**2,344,262,161**	2,063,974,786
Net Income	**34,017,470**	43,111,518

The Cover:
At night the lights of Fredericton create beautiful reflections on the broad expanse of the Saint John River.

June 23, 1981

To His Honour H. J. Robichaud
Lieutenant Governor of
New Brunswick

May it please your Honour:

The New Brunswick Electric Power Commission begs leave to submit, in accordance with the Electric Power Act, Chapter E-5, of the revised Statutes of New Brunswick 1973, the following report for the twelve month period ended March 31, 1981.

Respectfully submitted,

G.W.N. Cockburn, Q.C., Chairman,
The New Brunswick
Electric Power Commission

HOWARD ROSS LIBRARY OF MANAGEMENT
JUN 27 1983
MCGILL UNIVERSITY

Chairman's Comments

The Commission's operations once again concluded on a very encouraging and positive note. Successful inter-utility and federal/provincial/utility negotiations highlighted the year and together with continued high levels of advantageous interconnection sales and purchases, growth of in-province sales, and good plant availability, contributed to the results achieved.

Revenue for the year increased by $45.1 million to a record $455.0 million which was due to greater in-province sales and a rate increase averaging 7.8% implemented in May, 1980. Net income for the year, totalling $34.0 million, was favourably affected by interconnection sales, the availability of purchased power, and foreign exchange and short-term investment rates.

The 400 000 kW sales agreement with a consortium of New England utilities for power from the 1 005 000 kW Coleson Cove Generating Station was satisfactorily renegotiated to 133 000 kW during the year to reflect a revised federal policy on oil subsidies. The net margin to the Commission remained the same as a result of an agreement negotiated with the federal government.

The Commission's "off-oil" program, underway as a priority since the mid-seventies, received additional impetus through the National Energy Program announced on October 28, 1980. The federal energy program included grants to home owners and businesses to convert from oil to electric heating and the Coleson Cove oil-fired station is expected to be eligible for assistance in conversion to coal-firing.

Expanded interconnection activity continued as a high priority for the Commission. In this respect, an agreement was signed with the Massachusetts Municipal Wholesale Electric Company (MMWEC) for the sale of a 100 000 kW entitlement from the Point Lepreau Generating

Station. Planning also progressed toward enlarging the interconnection capability with Hydro-Québec by the mid-eighties.

During the year the Commission prepared its case relative to securing the natural gas distribution rights in the province. Studies strongly support the Commission's position that it can provide gas more efficiently to customers at a lower cost than other prospective distributors.

Construction approached the 100% mark at the Point Lepreau nuclear plant by year-end. Several major systems were commissioned. An agreement relative to the completed steam generator repairs was reached with the federal government, subsequent to the fiscal year-end.

During the year the Board of Commissioners was enlarged and strengthened. In addition the management structure was modified substantially. Both changes have improved the Commission's ability to respond effectively to changing demands in its operations.

The favourable results of the year just ended, and of past years, and the encouraging outlook for the 1980's is due to the enterprise and dedication of the management team and staff. I commend their efforts on behalf of the people of the province.

G.W.N. Cockburn, Q.C., Chairman,
The New Brunswick
Electric Power Commission

General Manager, A.J. O'Connor (left) and Chairman G.W.N. Cockburn at the Mactaquac Generating Station.

Operations

The demand for electricity increased during the year, reaching a new high. A system gross demand of 2 315 300 kW occurred on December 15, 1980, an increase of 7.3% above that of the previous year. The year's peak in-province demand of 1 490 100 kW occurred on December 22, 1980, up 3.9% from the previous high which was reached in February, 1979.

Total generation and purchases of energy from all sources increased by only 0.7% to 12 543 699 255 kW.h. Production of energy by the Commission's thermal and hydro units amounted to 5 777 426 160 kW.h and 2 802 158 600 kW.h respectively, representing a decrease of 7.8% for thermal and an increase of 11.2% for hydro.

Purchases of energy for the year were higher than ever before, totalling 3 964 065 495 kW.h an increase of 8.3%. Principal sources were Hydro-Québec which supplied 93% and the Nova Scotia Power Corporation, which supplied 4.5% of the total purchased. These purchases were on an interruptible basis under Interconnection Agreements between the Commission and the respective utilities.

Sales of energy to utilities interconnected with the Commission totalled 3 786 354 600 kW.h, a decrease of 12.5% from the previous year. The decrease in energy exports reflects a revision in the Coleson Cove Unit Participation Agreement with the Maine Electric Power Company (MEPCO). Effective January 1, 1981, the MEPCO entitlement was reduced to 133 000 kW from 400 000 kW, lowering firm energy exports through the last quarter. The entitlement of 133 000 kW under the Agreement continues through October, 1985.

While firm export energy sales were down, economy interconnection sales and purchases were up. The Commission increased transactions covered by Interconnection Agreements with utilities in Maine, Nova Scotia, Prince Edward Island and Québec. Sales opportunities for energy surpluses created valuable revenue sources during off-peak periods and when generating capacity exceeded provincial needs. Advantageous purchases from one utility frequently made it possible to use the Commission's generating capacity to profitably sell energy to another utility.

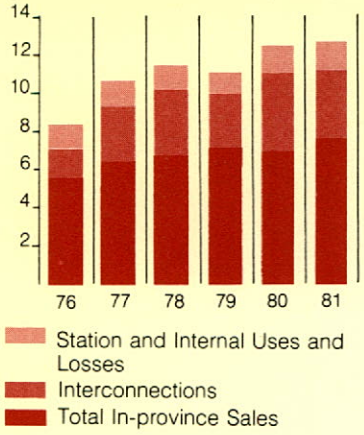
Significant improvements in plant operating efficiency were realized during the year. The continued increase in reliability of the new coal-fired unit at Dalhousie was reflected in a higher load factor and a 5% improvement in operating efficiency. The coal-fired generating capability of this plant displaced the equivalent of 600 000 barrels of oil.

At March 31, 1981, the Commission was serving 224 644 customers, an increase of 3 440 during the year. Average annual electrical consumption per residential customer was 10 077 kW.h, compared with 9 816 kW.h the year before. In-province sales increased 8.7% over the previous year. Purchased power supplied 40.5% of the in-province load, hydro 32.4%, oil 20.6% and coal 6.5%.

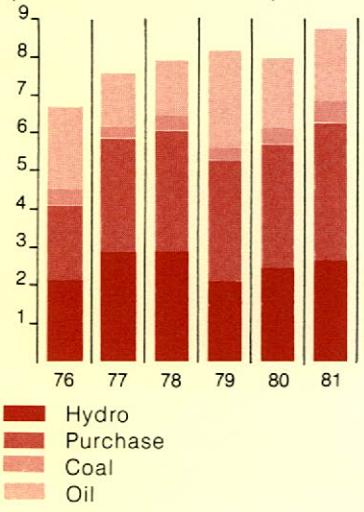
Construction

Significant progress was made in all remaining areas of construction at the Point Lepreau Generating Station. By year-end, nearly six years after the issue of the construction license for the Maritimes' first nuclear project, the construction of the plant was virtually complete and the project was well into the commissioning phase. A major accomplishment during the year was the completion of the repairs to the Lepreau steam generators. The repair program was carried out in such a way as to minimize the effect on the overall plant construction schedule and its success was due to the special efforts of the contractor, the supplier and Commission staff. While the Commission regrets the delays and extra costs involved in constructing a power plant in this changing, inflationary environment, it is determined that all necessary steps will be taken to ensure that the plant is safe and

Total Utilization
(in billions of kilowatt hours)



In-province Supply
(in billions of kilowatt hours)



Brunswick Mining and Smelting, one of the largest and most efficient lead-zinc-silver producers in the world, depends on electricity to power the machinery in many of its refining and smelting operations.

dependable. Present estimates call for the plant to go "critical" at the end of this year and to be "in-service" in the first quarter of 1982.

During the fiscal year, the installation of new 138 kV transmission lines was completed to industrial substations at Mount Pleasant Mines and Potash Company of America, and maintenance was carried out on approximately twenty-six transmission lines and forty substations and terminals. Twenty-two switchgear buildings throughout the province were insulated as part of the Commission's ongoing energy conservation program.

A new concrete fishway, to allow various species of fish in the St. Croix River safe passage past the Milltown Hydro Generating Station, was completed in December, 1980. The new facility was built by the Commission at a cost of approximately $550,000 and is part of a long range rehabilitation program to restore the fishery in the international St. Croix River to its prominence of decades ago.

Finance

Revenue from all sources amounted to $455.0 million, an increase of $45.1 million over the previous year. In-province revenue accounted for $41.8 million of the increase while interconnection revenue, despite a 12.5% reduction in total sales, increased $3.3 million.

The cost of fuel and purchased power increased by $23.7 million to $216.6 million. Operations, maintenance and general expenses increased $12.1 million to $83.0 million due to increased labour and material costs, increased taxes and heavy maintenance costs. Depreciation increased $3.9 million to $35.3 million due primarily to Unit 2 of the Dalhousie Generating Station and Units 5 and 6 of the Mactaquac Generating Station being in service for the full year. Net interest expense increased $7.3 million to $77.6 million. This increase was less than anticipated due to better than expected exchange rates, favourable short-term investment rates and sinking fund earnings.

River flows for the year were substantially above normal and an amount of $8.5 million, compared to $1.4 million for the previous year, was charged to Operations and credited to the Water Equalization Reserve.

Net income for the year amounted to $34.0 million, $9.1 million lower than the previous year. The balance of Earnings Invested in the Business increased to $81.6 million after an appropriation of $22.0 million to the Water Equalization Reserve. The accumulated appropriations, amounting to $88.0 million, represent an amount calculated to be adequate, on the basis of present day fuel costs, to cover the cost of replacing hydro generation should the lowest water flow conditions on record for a consecutive three year period recur.

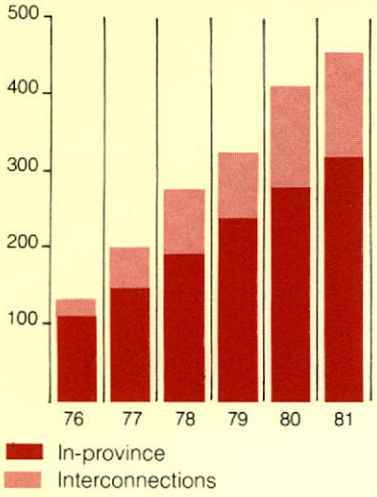
Total capital expenditures for the fiscal year were $286.0 million of which $247.8 million was applicable to the Point Lepreau Generating Station with the balance of $38.2 million being spent on other asset additions and modifications.

To provide funds for the continuing capital construction program, the following borrowings were completed: $75.0 million five year 13 3/4% debentures, dated May 15, 1980, issued publicly in Canada; $35.0 million twenty year 11 7/8% sinking fund debentures dated August 23, 1980, issued privately in Canada.

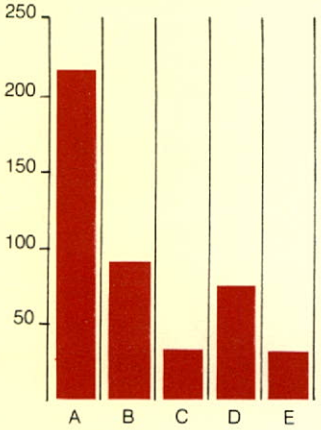
Subsequent to March 31, 1981 an agreement was negotiated with the Government of Canada which provides for the interest on the $350.0 million loan from Atomic Energy of Canada Limited to be proportionately reduced in relationship to the net output of the Point Lepreau Generating Station until the earlier of the in-service date or October 1982. See Notes 6 and 8 of Notes to the Financial Statements.

The Commission, to allow for greater flexibility in managing its cash flow and financing its construction program, maintained its bank lines of credit for short-term borrowing,

Revenue
(in millions of dollars)



Distribution of Revenue
(in millions of dollars)



A Fuel and Purchased Power
B Operation, Maintenance and General
C Depreciation
D Interest
E Appropriations to Reserve and Equity

The uranium oxide contained in a single nuclear fuel bundle provides the equivalent of 1 200 barrels of oil when used to generate electricity. Combustion Engineering's new fabrication plant in Moncton will supply a major portion of the nuclear fuel required for the Point Lepreau project.

guaranteed by the Province of New Brunswick, at $120.0 million. As of March 31, 1981 these short-term borrowings amounted to $10.6 million.

Staff

At March 31, 1981, the Commission had 2 561 regular and temporary employees, up 2.1% from the previous year. This slight increase in staff was due primarily to planned additions in the Nuclear Operations Group and general staff requirements.

During the year the Commission was successful in arriving at a collective agreement with I.B.E.W. Local 2309 (Clerical) whose contract was due to expire on June 30, 1980. The new contract terminates on June 30, 1983.

A series of union/management meetings were held at regular intervals throughout the year bringing together senior representatives from management, and the executive and representative union members from three I.B.E.W. bargaining units. The Commission will encourage the continuation of these sessions to further improve communications with labour in the future.

The Commission continued to revise and expand its staff training programs with major emphasis being placed on the development and training of employees in the supervisory, clerical and general managerial categories. Extensive time and effort were devoted to the training and licensing of employees in the Nuclear Operations Group at Point Lepreau.

Through the Safety and Health Department, improvements were made in the Eye Protection, Health Service and Heart Saver Programs for the benefit of the Commission and its employees.

Public Communications

Increasing the public's understanding of the Commission's operations, policies, plans, and options for the future remained a key objective during the year. Communications with customers and the general public continued at a high level through programs such as bill inserts, energy management/conservation seminars, public service announcements on electrical safety, and the speakers' bureau. In addition, Commission staff worked with the Department of Education to develop an energy-related curriculum supplement for New Brunswick schools and by year-end had completed preliminary plans for the establishment of a public reference center in the Commission's head office in Fredericton.

Subsequent to the end of the fiscal year, the Commission launched an awareness program to inform the public of new federal incentives to convert space and water heating systems from oil to other more plentiful forms of energy. The Commission fully supports these federal energy initiatives and will administer that part of the program dealing with conversion from oil to electric heating systems.

Throughout the past year, Commission staff collaborated extensively with the provincial Emergency Measures Organization in developing off-site contingency plans for the Point Lepreau Generating Station. This was done by holding a series of public meetings, conducting a demographic survey and various planning exercises.

Planning

During the year, an agreement was signed with the Massachusetts Municipal Wholesale Electric Company (MMWEC) for the sale of a 100 000 kW entitlement from the Point Lepreau Generating Station. The contract, which commences on the in-service date and terminates in 1987, with an option for extension to 1990, marks the first such sale of nuclear power to the United States from a Canadian utility. At year-end, the Commission had under consideration agreements to sell additional nuclear capacity to utilities in the United States. These export contracts, subject to the approval of the National Energy Board, are advantageous to the Commission in reducing the financial risk of a large generating unit in the early years of operation.

The establishment of a Co-ordinating Committee of Maritime Utilities was approved by the three Maritime Premiers during the year. The Co-ordinating Committee is to be comprised of senior officials from the three utilities together with observers from the governments of New Brunswick, Nova Scotia and Prince Edward Island, and the government of Canada. The Committee will develop co-ordinated forecasts and expansion plans, co-ordinate operations to minimize costs, co-ordinate electric energy research and development, and provide a regional focus for operations co-ordination with adjoining systems.

Although in-province industrial energy use had increased by approximately 15% at year-end, this was primarily due to an extended strike in the previous year which significantly decreased the consumption of a major industrial customer. When adjustments are made for this, the overall increase in provincial energy use was approximately 4%. This moderate increase is consistent with an annual growth rate of less than 5% experienced over the past four years which contrasts markedly with growth rates typically averaging 10% annually over the past fifteen years. The change in historic growth rates reflects factors such as conservation efforts in all sectors, rising energy costs, fewer housing starts, and a decrease in the number of large industrial loads coming on line.

Recent developments in the industrial sector, however, indicate that there will be renewed growth, notably in the pulp and paper and mining industries.

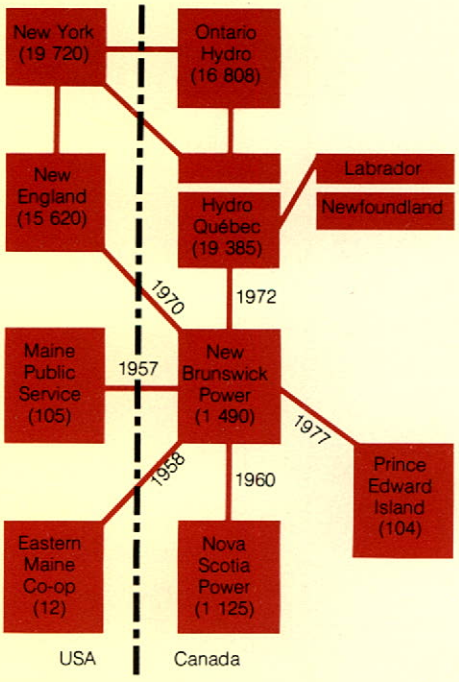
Major expansions currently in progress by the New Brunswick International Paper Company and by Consolidated Bathurst will add a total of approximately 100 MW to the system load. An extensive modernization is also in progress at the Fraser Company mill located in Atholville.

Three new mines have been added to the Commission's grid within the past two years. Although all three mines are presently in the early development and construction stages and are only taking about 1 MW each at this time, when in full production within two to three years they will expand to 5 - 7 MW. In addition, Brunswick Mines completed a major expansion within the past year which increased their load about 6 MW and completed a smaller expansion at their smelter located in Belledune. Concentrated studies are in progress regarding the feasibility of building a major zinc smelter in Belledune which would represent a load of 60 - 70 MW.

Recent completion of generating units at Mactaquac and Dalhousie, the imminent completion of Point Lepreau and the return of the Coleson Cove entitlement will enable the Commission to meet presently forecast load growth until beyond 1990. Growth in demand on the system is forecast to increase at a compound rate of 3.7% per year over the next ten years.

The National Energy Program provided a clear message to Canadians that oil must be replaced by other energy sources and confirmed that the Commission's energy program of hydro, coal and nuclear expansion has been totally correct. The Commission will continue to explore ways in which imported oil use in generation can be further reduced. One method currently being investigated is the establishment of a second high-voltage direct current intercon-

Eastern Canada and United States Interconnected Power Systems



Year of first interconnection is shown
( ) indicates 1980/81 winter peak loads in megawatts
indicates isolated operation to/from neighbouring systems

Illumination and power provided by electricity allows shipbuilding to continue around-the-clock at the Saint John Dry Dock.

nection with Hydro-Québec to take advantage of available surplus energy in the period 1985 to 1990. The conversion of the Coleson Cove Generating Station from oil to coal and natural gas fuelling is also being studied. Although these options are dependent on considerations such as fuel supply, availability and cost, they could largely remove the Commission's future dependence on oil-fuelled generation.

The feasibility of converting one of the boilers in the oil-fired Courtenay Bay Generating Station to wood chip fuel is also being studied in co-operation with MacMillan Rothesay Limited. Under such a scheme the converted boiler would burn chipped waste wood collected from previously harvested areas.

A number of options are open to the Commission for possible generation additions in the 1990's and beyond. These include the addition of a second nuclear unit at Point Lepreau, redevelopment of existing hydro generating stations, development of new hydro sites, utilization of native coal and peat, and development of new interconnections. These options will continue to be evaluated with the objective of minimizing the cost of electric energy to our customers by maximizing the use of indigenous and renewable resources for power generation.

Fish have been raised in the warm water released from the Grand Lake Generating Station for the past four years through a co-operative program with the Department of Natural Resources. This experimental aquaculture program has proved so successful that it has been expanded to produce over 125 000 trout and 30 000 Atlantic salmon annually. A hatchery was added to the Grand Lake facilities during the year which will use the plant's heated effluent to accelerate the hatching and early rearing of these species. Further refinements in the coming year offer the promise of even more cost-effective methods of aquaculture to enhance New Brunswick's fishery resource. As in previous years, the salmon and trout raised are released to stock New Brunswick lakes and rivers and provide recreation.

Evening harness racing is one of many popular sport and recreational activities made possible by electric outdoor lighting systems.

G.W.N. COCKBURN, Q.C.
Chairman

A. J. O'CONNOR
General Manager

The New Brunswick Electric Power Commission

Statement of Generation and Sales

for fiscal year ended 31 March, 1981

	1981 Kilowatt hours	1980 Kilowatt hours	Difference Kilowatt hours	%
GENERATION				
Hydro	**2 802 158 600**	2 519 004 700	+ 283 153 900	+ 11.2
Thermal	**5 777 426 160**	6 267 018 960	− 489 592 800	− 7.8
Diesel	**49 000**	6 429 300	− 6 380 300	− 99.2
Purchases	**3 964 065 495**	3 658 912 030	+ 305 153 465	+ 8.3
Gross Generation and Purchases	**12 543 699 255**	12 451 364 990	+ 92 334 265	+ 0.7
Station Service	**496 464 767**	492 030 862	+ 4 433 905	+ 0.9
Net Generation and Purchases	**12 047 234 488**	11 959 334 128	+ 87 900 360	+ 0.7
Losses — Transformer and Transmission	**524 045 337**	484 535 216	+ 39 510 121	+ 8.2
Losses — % of Net Generation and Purchases	**4.3%**	4.1%		
Total Energy Distribution	**11 523 189 151**	11 474 798 912	+ 48 390 239	+ 0.4
SALES				
Wholesale	**639 610 943**	627 815 764	+ 11 795 179	+ 1.9
Industrial Power	**3 621 974 673**	3 159 140 342	+ 462 834 331	+ 14.7
General Service	**1 164 968 392**	1 118 086 563	+ 46 881 829	+ 4.2
Street Lights	**50 369 501**	49 269 771	+ 1 099 730	+ 2.2
Residential	**2 057 249 633**	1 975 428 248	+ 81 821 385	+ 4.1
Average Annual kW.h per Residential Customer	**10 077**	9 816		
Average Revenue per Residential kW.h (cents)	**4.94**	4.67		
TOTAL IN-PROVINCE SALES	**7 534 173 142**	6 929 740 688	+ 604 432 454	+ 8.7
Interconnections	**3 786 354 600**	4 326 851 900	− 540 497 300	− 12.5
GRAND TOTAL	**11 320 537 742**	11 256 592 588	+ 63 935 154	+ 0.6
Station and Internal Use	**496 852 800**	492 424 571	+ 4 428 229	+ 0.9
TOTAL LOSSES	**726 318 713**	702 347 831	+ 23 970 882	+ 3.4
GROSS GENERATION AND PURCHASES	**12 543 699 255**	12 451 364 990	+ 92 334 265	+ 0.7

Statement of Operating and Physical Statistics

	31 March 1971*	31 March 1973*	31 March 1976*	31 March 1980*	**31 March 1981**
Plant Nameplate Capacity — kW	1 032 286	1 150 326	1 151 326	2 526 576	**2 526 576**
Gross Generation — Purchases kW.h	4 747 813 599	7 206 701 925	8 184 438 483	12 451 364 990	**12 543 699 255**
Total Energy Distributed — kW.h	4 378 370 155	6 710 992 704	7 323 924 353	11 474 798 912	**11 523 189 151**
Total Revenue	$ 55,101,439	$ 78,990,893	$ 131,513,876	$ 409,957,872	**$ 455,031,722**
Total Expenditures And Appropriations	$ 54,545,893	$ 78,268,439	$ 125,815,681	$ 401,097,381	**$ 443,014,252**
Fixed Assets, Including Work In Progress	$ 405,122,275	$ 483,264,042	$ 869,261,406	$ 2,063,974,786	**$ 2,344,262,161**
Current Assets	$ 25,486,195	$ 19,558,043	$ 74,870,156	$ 247,109,259	**$ 154,761,706**
Current Liabilities	$ 20,206,936	$ 25,824,373	$ 72,215,034	$ 172,609,560	**$ 228,849,430**
Inventories	$ 2,841,733	$ 4,412,034	$ 16,496,196	$ 35,312,833	**$ 42,626,242**
Long Term Debt — Net	$ 304,767,394	$ 351,826,572	$ 709,735,073	$ 1,928,402,135	**$ 1,961,663,406**
Sinking Fund Assets	$ 21,626,246	$ 25,017,768	$ 35,213,916	$ 73,274,713	**$ 94,797,121**
Accumulated Depreciation	$ 78,549,329	$ 96,086,034	$ 133,488,351	$ 236,337,582	**$ 269,119,450**
Other Reserves And Earnings Retained In The Business	$ 33,836,586	$ 42,193,381	$ 59,299,870	$ 144,406,911	**$ 186,895,349**
Reserves, Earnings Retained In The Business And Accumulated Depreciation	$ 112,385,915	$ 138,279,415	$ 192,788,221	$ 380,744,493	**$ 456,014,799**
Total Reserves, Earnings Retained In The Business As Percentage Of Fixed Assets	27.7%	28.6%	22.2%	18.4%	**19.5%**
Kilometres Transmission Lines	4 185	4 573	4 864	5 698	**5 702**
Kilometres Distribution Circuits	14 275	16 071	18 296	20 873	**21 168**
Number Residential Customers	138 213	152 870	176 953	201 240	**204 134**
Number Industrial Customers	786	851	985	1 319	**1 377**
Number General Service Customers	11 495	11 768	13 617	16 609	**17 088**
Number Street Light Customers	1 495	1 620	1 803	2 036	**2 045**
Total Customers	151 989	167 109	193 358	221 204	**224 644**

*On the basis of the accounting policies in effect when originally published

FINANCIAL STATEMENTS

The New Brunswick Electric Power Commission

Balance Sheet

as at 31 March 1981

ASSETS

	1981		1980	
Fixed assets				
Land, buildings, plant and equipment, at cost less accumulated depreciation, and construction in progress (Note 2)		**$2,075,142,711**		$1,827,637,204
Current assets				
Cash and short-term investments	**$ 35,994,134**		$150,290,856	
Accounts receivable	**75,947,802**		61,250,887	
Material, supplies and fuel, at cost	**42,626,242**		35,312,833	
Prepaid expenses	**193,528**		254,683	
		154,761,706		247,109,259
Deferred charges				
Unrealized foreign exchange differences, less amounts amortized (Note 3)	**118,208,482**		141,502,362	
Debenture and note discount and issue expenses, less amounts amortized	**20,761,997**		21,100,504	
Survey, engineering and training expenses in connection with expansion of facilities	**1,006,145**		1,036,107	
Other	**192,418**		158,595	
		140,169,042		163,797,568
Funds held for specified purposes				
Insurance fund		**7,575,075**		7,688,924
		$2,377,648,534		$2,246,232,955

On behalf of The New Brunswick Electric Power Commission

G.W.N. COCKBURN, Q.C., Chairman

LOUIS E. LANDRY, Vice-Chairman

LIABILITIES

	1981		1980	
Long-term debt (Note 4)				
Guaranteed by the Province of New Brunswick				
Debentures and notes issued by the Commission		**$1,596,155,245**		$1,530,046,962
Note payable to Atomic Energy of Canada Limited		**350,000,000**		350,000,000
Loans from Northern Canada Power Commission		**51,453,103**		52,755,990
Loan from the Province of New Brunswick		**3,294,765**		4,474,248
Other long-term debt		**14,127,988**		13,076,311
		2,015,031,101		1,950,353,511
Less payments due within one year		**53,367,695**		21,951,376
		1,961,663,406		1,928,402,135
Current liabilities				
Bank indebtedness (Note 9)	**$25,629,357**		$30,700,262	
Accounts payable and accruals	**81,336,499**		66,060,116	
Accrued interest on debentures and notes issued by the Commission	**60,555,800**		39,796,214	
Accrued interest on loan from the Province of New Brunswick	**34,937**		42,731	
Current portion of long-term debt	**53,367,695**		21,951,376	
Holdbacks on contracts in progress	**7,420,590**		13,639,315	
Service deposits	**504,552**		419,546	
		228,849,430		172,609,560
Deferred liability				
Customers' advances in aid of construction		**240,349**		814,349
Reserves (Note 5)		**105,283,071**		74,812,103
Earnings invested in the business		**81,612,278**		69,594,808
		$2,377,648,534		$2,246,232,955

The New Brunswick Electric Power Commission

Statement of Income

for the year ended 31 March 1981

	1981		1980	
Revenue				
Sales of power	**$446,655,702**		$404,472,118	
Sales of steam	**4,289,365**		2,261,209	
Miscellaneous	**4,086,655**		3,224,545	
		$455,031,722		$409,957,872
Expenditure				
Purchased power	**78,532,981**		59,261,681	
Generated power				
Fuel	**138,077,131**		133,628,923	
Other	**35,374,839**		26,502,722	
Operations, maintenance, administration and general	**47,713,441**		44,390,214	
Depreciation	**35,250,835**		31,366,601	
		334,949,227		295,150,141
Income before interest and exchange		**120,082,495**		114,807,731
Interest and exchange	**187,762,504**		154,367,110	
Amortization of debenture discount and expense	**2,007,280**		1,639,824	
Amortization of unrealized foreign exchange	**8,015,928**		8,425,956	
	197,785,712		164,432,890	
Less				
Income from sinking funds and other investments	**23,761,516**		21,780,208	
Interest capitalized	**96,430,139**		72,385,411	
	120,191,655		94,165,619	
		77,594,057		70,267,271
Net income for the year before adjustment for water equalization		**42,488,438**		44,540,460
Adjustment to equalize generation costs due to fluctuation in water flows (Note 5)		**8,470,968**		1,428,942
Net income for the year		**$ 34,017,470**		$ 43,111,518

The New Brunswick Electric Power Commission

Statement of Earnings Invested in the Business

for the year ended 31 March 1981

	1981	1980
Balance at beginning of year	**$ 69,594,808**	$ 60,734,317
Net income for the year	**34,017,470**	43,111,518
	103,612,278	103,845,835
Deduct appropriation to water equalization reserve	**22,000,000**	34,251,027
Balance at end of year	**$ 81,612,278**	$ 69,594,808

The New Brunswick Electric Power Commission

Statement of Changes in Financial Position

for the year ended 31 March 1981

	1981	1980
Source of funds		
From operations		
Net income for the year	**$ 34,017,470**	$ 43,111,518
Amounts charged against operations but not requiring an outlay of funds		
Provision for depreciation of buildings, plant and equipment	**35,250,835**	31,366,601
Vehicle depreciation	**1,709,000**	1,894,648
Amortization of debenture discount and expense	**2,007,280**	1,639,824
Adjustment to equalize generation costs due to fluctuation in water flows	**8,470,968**	1,428,942
Survey, engineering and development expenses written off	**173,352**	173,352
Amortization of unrealized foreign exchange	**8,015,928**	8,425,956
	89,644,833	88,040,841
Proceeds from notes and debentures issued less discount and expense	**108,331,229**	172,334,570
Loans from Atomic Energy of Canada Limited	**—**	79,653,480
Contributions in aid of construction	**50,884**	868,992
Other loans	**1,051,677**	1,053,424
Proceeds from sale of assets	**917,918**	151,642
Decrease in other deferred charges	**—**	13,940
Decrease in working capital exclusive of changes in current portion of long-term debt	**117,171,104**	58,733,203
	$317,167,645	$400,850,092
Application of funds		
Expenditure on fixed assets	**$286,008,144**	$376,076,751
Redemption of Commission debentures (net of available sinking funds)	**11,200,672**	11,966,493
Sinking fund deposits	**18,478,728**	11,537,203
Repayment of loan from Northern Canada Power Commission	**1,302,887**	1,231,531
Increase in deferred survey, engineering and training expense	**143,391**	38,114
Increase in other deferred charges	**33,823**	—
	$317,167,645	$400,850,092

Notes to Financial Statements

31 March 1981

1. Summary of significant accounting policies

The financial statements have been prepared in conformity with generally accepted accounting principles as established in Canada.

a. Fixed asset additions and retirements

The cost of additions to fixed assets is the original cost of contracted services, direct labour and material, interest on funds used during construction and indirect charges for administration and other expenses. Administration and other expenses are capitalized during construction by applying a portion of such overheads to direct construction costs incurred each month.

Interest during construction is capitalized monthly on the basis of the interest costs of borrowings expended on plant under construction.

The cost of repairs and maintenance is charged to income while the cost of improvements is capitalized. For property replaced or renewed, the original cost plus removal cost less salvage and accumulated depreciation is charged or credited to depreciation expense in the statement of income.

Contributions in aid of construction, which include government grants in respect of new facilities, are netted against the cost of plant financed thereby. Amounts received from customers are being amortized over the estimated service lives of the related assets, and the credit resulting therefrom is offset against the corresponding provision for depreciation.

Depreciation is provided by the Commission on a straight-line basis sufficient to amortize the cost of fixed assets, less estimated salvage value, over their estimated useful lives. Depreciation is provided on the net cost of fixed assets in respect of which government grants have been provided. The estimated useful lives of the main categories of fixed assets are as follows:

Assets	Years
Hydro Generating Stations	68
Thermal Generating Stations	30
Gas Turbine Generating Station	25
Diesel Generating Station	20
Terminals and Substations	30
Transmission System	40
Distribution System	28
Buildings	40

b. Inventories

Inventories of materials and supplies are valued at average cost. Fuel is valued at cost using the first-in, first-out method.

c. Debenture and note discount and issue expenses

The Commission amortizes debenture and note discounts or premiums and the expenses of issues over the lives of the issues to which they pertain.

d. Survey, engineering and training expenses in connection with expansion of facilities

Survey and engineering expenses relating to construction projects being considered are deferred until a project is authorized for construction by the Commission. Such costs together with certain training costs are then amortized against future income either directly or by annual depreciation charges resulting from certain of the items

being capitalized. If a project is discontinued, all applicable costs are charged to income in that year.

e. Foreign exchange transactions

Long-term monetary assets and liabilities denominated in foreign currencies are translated to Canadian dollars at rates of exchange prevailing at the balance sheet date. The resulting differences between the translation at the date of the original transaction and at the balance sheet date are accumulated in an unrealized foreign exchange account which is shown on the balance sheet under deferred charges. This account is amortized to income over the remaining life of the related monetary assets or liabilities, except that amounts associated with the financing of major construction projects still in progress are deferred until the project is completed before being amortized over the then remaining life of the related monetary liabilities.

Exchange gains or losses resulting from transactions affecting current operations are reflected in income as realized.

f. Revenue

Billings to residential and general service customers are rendered monthly on a cyclical basis. All other customers are billed at the end of each month. The Commission does not accrue revenue in respect of items not billed at the end of a fiscal period.

2. Fixed assets

	1981	1980
Land, buildings, plant and equipment, at cost		
Power generating stations	**$ 725,758,632**	$ 716,748,675
Transmission system	**123,714,399**	123,329,422
Substations	**158,701,671**	158,294,832
Distribution system	**189,189,295**	175,098,098
Other properties	**9,247,810**	9,058,551
Communications equipment	**3,927,318**	3,872,423
Motor vehicles and miscellaneous equipment	**20,426,027**	19,445,949
	1,230,965,152	1,205,847,950
Less contributions in aid of construction	**29,673,615**	29,048,731
	1,201,291,537	1,176,799,219
Less accumulated depreciation	**269,119,450**	236,337,582
	932,172,087	940,461,637
Construction in progress	**1,142,970,624**	887,175,567
	$2,075,142,711	$1,827,637,204

3. Unrealized foreign exchange differences, less amortized

	1981	1980
Exchange adjustment at balance sheet date on debentures and notes issued by the Commission		
Payable in Swiss francs	**$ 38,692,000**	$ 46,360,000
Payable in United States dollars	**104,254,768**	108,665,206
Exchange adjustment at balance sheet date on loan from the Province of New Brunswick	**728,520**	912,978
Exchange premium on assets denominated in foreign currencies held in sinking funds maintained by the Province of New Brunswick		
Sinking fund on debentures and notes issued by the Commission	**(9,689,796)**	(5,780,068)
Sinking fund on loan from the Province of New Brunswick	**(44,827)**	(40,874)
Exchange premium on assets held in the insurance fund	**(75,075)**	(188,924)
	133,865,590	149,928,318
Less accumulated amortization	**15,657,108**	8,425,956
	$118,208,482	$141,502,362

4. Long-term debt

Debentures and notes issued by the Commission

Date of maturity	Interest rate %	1981	1980
Payable in Canadian dollars			
1981 15 May	9	**$ 20,000,000**	$ 20,000,000
1985 17 March	13 1/4	**75,000,000**	75,000,000
1985 15 May	13 3/4	**75,000,000**	—
1987 15 March	5 1/2	**2,650,000**	2,650,000
1988 1 November	5 1/2	**2,000,000**	2,000,000
1989 15 October	8 1/2	**228,000**	228,000
1990 10 January	11 1/4	**50,000,000**	50,000,000
1990 1 August	9	**293,000**	293,000
1991 1 July	5 3/4	**5,000,000**	5,000,000
1992 15 March	5 1/2	**7,350,000**	7,350,000
1993 1 November	5 1/2	**6,000,000**	6,000,000
1994 15 June	5 1/2	**10,000,000**	10,000,000
1994 31 December	5 1/2	**3,790,000**	3,790,000
1995 1 May	6 1/4	**15,000,000**	15,000,000
1995 15 May	10 3/8	**20,000,000**	20,000,000
1995 15 October	5 3/4	**7,500,000**	7,500,000
1996 1 January	6	**13,800,000**	13,800,000
1996 1 March	6	**4,000,000**	4,000,000
1996 1 October	6 1/2	**6,100,000**	6,100,000
1996 15 November	7 7/8	**20,000,000**	20,000,000
1997 15 October	8 3/8	**20,000,000**	20,000,000
1998 15 November	8 1/2	**25,000,000**	25,000,000
1999 1 October	11	**24,674,000**	24,674,000
1999 31 December	5 1/2	**8,210,000**	8,210,000
2000 1 March	10	**50,000,000**	50,000,000
2000 23 August	11 7/8	**35,000,000**	—
2003 21 December	10 1/4	**75,000,000**	75,000,000
2005 10 January	11 1/4	**50,000,000**	50,000,000
		631,595,000	521,595,000

Date of maturity	Interest rate %		1981		1980
Payable in Swiss francs					
1985 20 April	4 1/4	$	**60,815,000****	$	60,815,000**
1991 28 September	6		**31,328,000***		31,328,000*
1992 30 August	5 1/4		**36,008,000***		36,008,000*
1993 30 March	3 3/4		**57,113,000****		57,113,000**
Canadian dollars at date of issue			**185,264,000**		185,264,000
Exchange adjustment at balance sheet date			**38,692,000**		46,360,000
			223,956,000		231,624,000
* each of 80,000,000 Swiss francs					
** each of 100,000,000 Swiss francs					
Payable in United States dollars					
1983 15 January	9	**US$**	**30,000,000**	US$	32,000,000
1986 2 January	5 1/4		**4,014,000**		4,895,000
1986 1 November	5 1/4		**2,007,000**		2,676,000
1987 1 September	5 1/4		**3,302,000**		3,760,000
1990 15 April	5		**10,058,000**		10,668,000
1991 1 May	5 1/2		**11,056,000**		11,594,000
1991 15 November	6		**17,500,000**		17,500,000
1992 15 October	6 1/2		**15,000,000**		15,000,000
1993 15 February	6 7/8		**15,000,000**		15,000,000
1994 1 February	7 3/4		**10,000,000**		10,000,000
1994 1 March	9 3/4		**68,000,000**		71,000,000
1995 1 October	10 1/2		**75,000,000**		75,000,000
1997 15 February	9		**100,000,000**		100,000,000
1998 1 April	7 7/8		**41,850,000**		43,425,000
2001 1 May	9 3/8		**100,000,000**		100,000,000
2004 1 April	8 3/4		**50,000,000**		50,000,000
2005 15 January	10		**75,000,000**		75,000,000
2007 1 August	8 3/4		**75,000,000**		75,000,000
United States dollars			**702,787,000**		712,518,000
Exchange premium at date of issue		**CDN$**	**27,025,843**	CDN$	27,710,739
Exchange adjustment at balance sheet date			**104,254,768**		108,665,206
			834,067,611		848,893,945
			1,689,618,611		1,602,112,945
Less sinking fund assets held in trust by the Province of New Brunswick					
Book value			**83,773,570**		66,285,915
Exchange premium on assets denominated in foreign currencies			**9,689,796**		5,780,068
			93,463,366		72,065,983
			$1,596,155,245		$1,530,046,962

	1981	1980
Atomic Energy of Canada Limited		
Note payable in 25 equal annual instalments of principal and interest at 9.7064% per annum, commencing one year after the in-service date for the Point Lepreau Generating Station or one year after 1 April 1983, whichever is earlier. Prior to this earlier date, interest alone is payable semi-annually with proportionate reduction in relationship to the net plant output as contemplated by an agreement signed subsequent to 31 March 1981. (Notes 6 and 8)	**$350,000,000**	$350,000,000
Loans from Northern Canada Power Commission		
Repayable in annual instalments of principal and interest at rates varying from 4 1/2% to 8 1/2% to the year 2011	**$ 51,453,103**	$ 52,755,990
Loan from the Province of New Brunswick		
For which debentures have been issued by the Province to provide funds for the Commission (payable in United States dollars)	**US$ 3,900,000**	US$ 4,770,000
Exchange adjustment at balance sheet date	**CDN$ 728,520**	CDN$ 912,978
	4,628,520	5,682,978
Less sinking fund assets held by the Province relating to such debentures		
Book value	**1,288,928**	1,167,856
Exchange premium on assets denominated in foreign currencies	**44,827**	40,874
	1,333,755	1,208,730
	$ 3,294,765	$ 4,474,248

	1981	1980
Other long-term debt		
City of Campbellton — in respect of the purchase of distribution system; payable, together with interest at 9 1/4% per annum, in equal annual instalments to the year 1993	**$ 1,201,788**	$ 1,255,619
Government of Canada — in respect of the construction of a transmission line from Coleson Cove to Salisbury; payable, together with accrued interest at rates varying from 9 1/4% to 9 5/8% per annum, as to 50% on 1 April 1981 and the remainder in equal annual instalments of principal and interest to the year 2011	**12,926,200**	11,820,692
	$14,127,988	$13,076,311

Long-term debt payments

Long-term debt maturities (after deducting available sinking funds) and sinking fund requirements in respect of debt outstanding at 31 March 1981 are as follows for the five years ending 31 March 1986:

	Canadian dollars	U.S. dollars	Swiss francs
Year ending 31 March 1982	$31,181,976	$16,597,000	SFr 4,000,000
Year ending 31 March 1983	9,927,820	52,723,000	13,000,000
Year ending 31 March 1984	11,884,328	26,430,000	13,000,000
Year ending 31 March 1985	87,381,988	25,594,000	13,000,000
Year ending 31 March 1986	14,924,615	24,690,000	113,000,000

Sinking funds

The Minister of Finance of the Province of New Brunswick, as Trustee for the Commission, maintains a sinking fund for all debenture issues requiring same. Sinking fund investments are carried at cost, and the earnings are reflected in the Commission's income. Commission debentures held in the fund are not cancelled until maturity.

Issues of debentures of the Commission requiring annual redemption for sinking fund purposes provide that the Commission may satisfy its obligation by purchasing outstanding debentures of the respective issues at any time at prices not exceeding 100% of the principal amount thereof. The debentures so used to satisfy sinking fund obligations are cancelled with notification to the Minister of Finance and are not reissued. Any profit or loss resulting from such transactions is reflected in income.

5. Reserves

	1981	1980
Water equalization	**$ 97,783,071**	$67,312,103
Insurance	**7,500,000**	7,500,000
Total Reserves	**$105,283,071**	$74,812,103

Water equalization reserve

In order to equalize the effect on generation cost due to fluctuations in water flows, the Commission annually charges or credits income with an amount calculated to adjust generation costs to an average monthly water condition. The calculation is based on historical water flow data compiled over a period of 35 years. The offsetting debit or credit is included in the water equalization reserve account. In addition, as the hydro generating capacity of the Commission or the costs of alternate sources of supply increase, the reserve is increased periodically by appropriations from earnings invested in the business as the Commission deems advisable. Total appropriations to the reserve amounted to **$88,000,000** as at **31 March 1981** which represents the current cost of replacing hydro generation should the lowest historical water flow conditions for a consecutive three year period recur.

Insurance reserve

This reserve has been established by appropriations from earnings invested in the business and serves as a self-insurance fund to complement the insurance coverage maintained with insurance companies.

6. Capital commitments

The Commission is constructing a single 630 000 kilowatt unit nuclear generating station at Point Lepreau. Commercial operation of the unit, previously scheduled for late 1981, is currently scheduled for early 1982, due to the delay necessitated by extensive repairs required to be made to the steam generators. This scheduled date is subject to receipt of the required regulatory approvals from the Atomic Energy Control Board. Atomic Energy of Canada Limited, the Commission's supplier of the steam generators, reached an agreement with the manufacturer for their repair. This agreement did not address the responsibility for additional costs or consequential costs associated with the delay of the project. These costs have been the subject of negotiations with the Government of Canada.

Subsequent to **31 March 1981** an agreement was negotiated which provides for the interest on the $350,000,000 loan from the Government of Canada (through Atomic Energy of Canada Limited) to be proportionately reduced in relationship to the net plant output until the earlier of the in-service date or October 1982. Based on the expected in-service date, the Commission estimates the amount forgiven will aggregate approximately $85,000,000. Maximum interest forgiveness, based on zero plant output to October 1982 would amount to approximately $102,000,000. A related agreement negotiated provides for additional loans from the Government of Canada to the Commission in the event that the Point Lepreau plant does not reach a specified minimum level of availability on an annual basis during the first ten years of operation. These performance related loans, subject to repayment if the minimum is surpassed, are not to exceed a principal amount of $48,750,000 annually to a maximum principal amount of $130,000,000 for the first ten years of operation. Any loan balance at the end of ten years, with accrued interest, will be amortized over the succeeding ten years.

Expenditures to **31 March 1981** and 31 March 1980 were **$1,126,776,331** and $878,978,800 respectively. The estimated cost to the expected commercial operation date is $1,215,000,000 based on the Commission receiving the $85,000,000 mentioned above.

The Commission has also concluded an agreement with a utility in the United States, subject to the approval of the National Energy Board, for the sale of a 100 000 kilowatt entitlement to power and energy from the Point Lepreau plant commencing on the in-service date and terminating in 1987 with an option, in favour of the purchaser, for extension to 1990. This agreement requires the utility to pay, after the in-service date, for its proportionate share of the capital, operating and maintenance and other fixed charges of the Point Lepreau plant on an "all events" basis.

It is estimated that during the fiscal year ending 31 March 1982 a total of approximately $159,557,000 will be expended on capital projects, which amount is net of the $85,000,000 estimated to be received under the above mentioned agreement.

7. Contingent liability

The Commission, to be assured of an adequate supply of coal, has guaranteed payments of N. B. Coal Limited, a corporation controlled and owned by the Crown in right of the Province, under a loan obligation and lease agreement for the acquisition of a dragline for use in mining coal. The maximum potential exposure over a 19 year period is $35,000,000. In exchange for its guarantee, the Commission is entitled to the total coal production at cost and to an assignment of the dragline and associated mining rights should N. B. Coal Limited default under any terms of the lease agreement.

8. Subsequent events

On 1 May 1981, the Commission issued $100,000,000 of 15% debentures maturing on 1 May 1991, payable in United States dollars.

Subsequent to **31 March 1981,** the Commission entered into two agreements with Atomic Energy of Canada Limited and the Government of Canada relating to the Point Lepreau Generating Station. (Note 6)

9. Short-term line of credit

The Commission has bank lines of credit guaranteed by the Province of New Brunswick for short-term borrowings totalling $120,000,000. The amount of such short-term borrowings at **31 March 1981** was **$10,600,000** and is reflected on the balance sheet, together with outstanding cheques, under the caption "Bank Indebtedness".

10. Sales of power

Sales of power include $117,106,292 (1980 — $115,512,179) to utilities in the United States.

The value of these sales includes incremental fuel costs and operating costs plus a margin of net benefit to the Commission.

Auditors' Report

Touche Ross & Co.
Chartered Accountants

The Honourable Richard B. Hatfield,
Premier of the Province of New Brunswick,
Fredericton, New Brunswick.

Sir:

We have examined the balance sheet of The New Brunswick Electric Power Commission as at 31 March 1981 and the related statements of income, earnings invested in the business and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the Commission as at 31 March 1981 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Touche Ross & Co.

Chartered Accountants

Fredericton, N.B.,
23 June 1981.

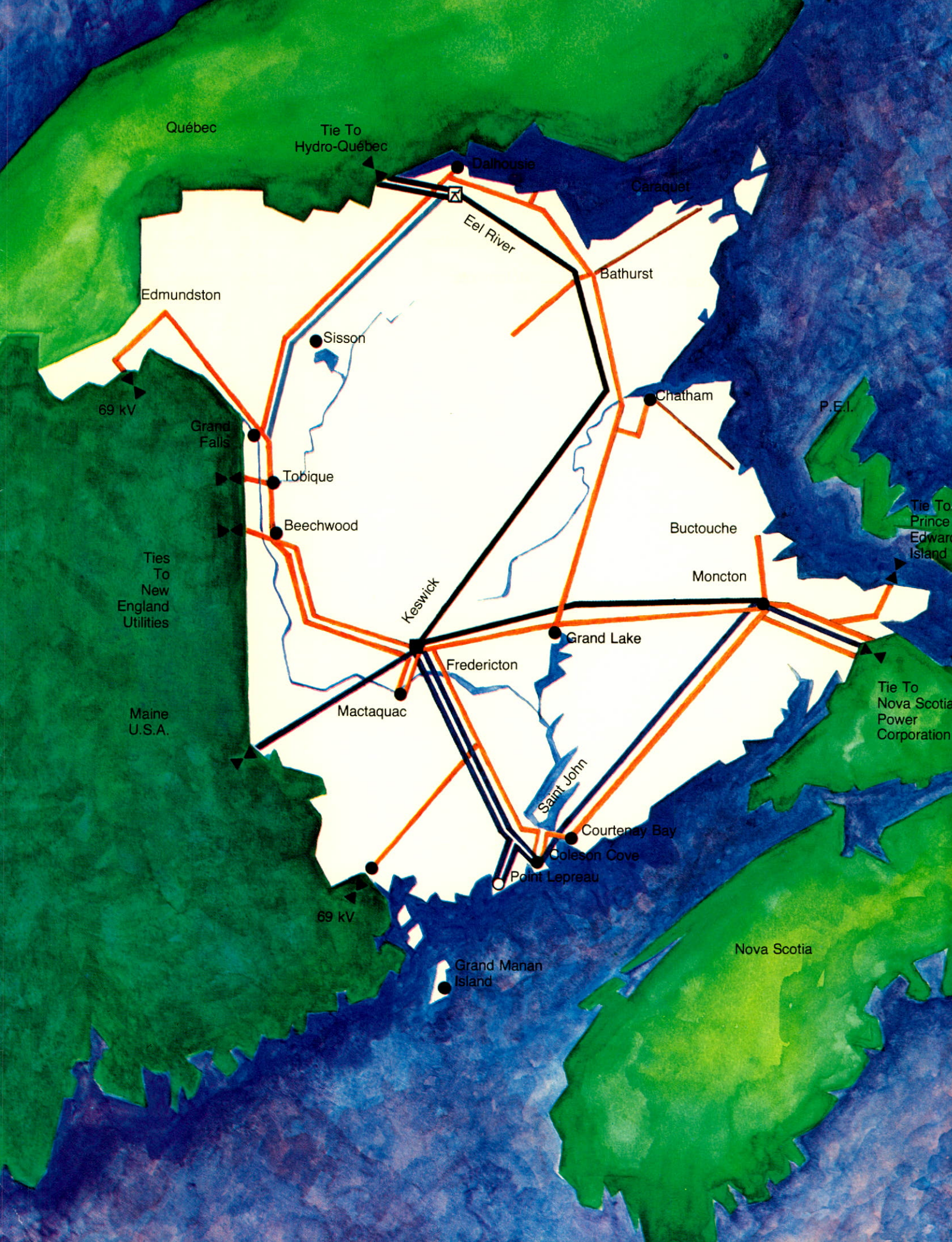
191 PROSPECT STREET WEST - SUITE 306
FREDERICTON, NEW BRUNSWICK E3B 2T7 - TELEPHONE (506) 455-0340

System Map

The New Brunswick Electric Power Commission

Generating Station Data

	No. of Units	Nameplate Capacity kW
HYDRO		
Mactaquac	6	600 000
Beechwood	3	115 000
Grand Falls	4	63 000
Tobique	2	20 000
Sisson	1	10 000
Milltown	7	3 900
TOTAL HYDRO	23	811 900
STEAM		
Coleson Cove (Oil)	3	1 005 000
Courtenay Bay (Oil)	4	263 365
Dalhousie (Oil/Coal)	2	300 000
Grand Lake 2 (Coal)	4	85 000
Chatham (Coal/Oil)	2	32 500
TOTAL STEAM	15	1 685 865
GAS TURBINE		
Moncton	1	25 000
TOTAL GAS TURBINE	1	25 000
DIESEL		
Grand Manan	5	3 811
TOTAL DIESEL	5	3 811
GRAND TOTAL	44	2 526 576


Québec
Tie To
Hydro-Québec
Dalhousie
Caraquet
Eel River
Bathurst
Edmundston
Sisson
69 kV
Chatham
P.E.I.
Grand
Falls
Tobique
Beechwood
Buctouche
Tie To
Prince
Edward
Island
Ties
To
New
England
Utilities
Moncton
Keswick
Grand Lake
Fredericton
Mactaquac
Tie To
Nova Scotia
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